DOCUMENT RESUME

ED 188 328 EA 012 783

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TITLE Efficiency and Enrollment Modification in Higher Education. Project Report No. 80-A5.
INSTITUTION Stanford Univ., Calif. Inst. for Research on Educational Finance and Governance.
SPONS AGENCY EXXON Education Foundation, New York, N.Y.; National Inst. of Education (DHEW), Washington, D.C.
PUB DATE Apr 80
GRANT OB-NIE-G-78-0212
NOTE 35p.

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *College Bound Students; *College Choice; *Decision Making; *Enrollment Influences; Higher Education; *Models; *Student Motivation

ABSTRACT

Increasing the proportion of prospective students who enter college has been a long-standing objective of colleges. This article summarizes findings concerning the effects and costs of various tactics that public agencies should employ to influence student enrollment decisions. First, the paper describes three phases in the student choice process and outlines relevant empirical results. Next, it assesses nine typical tactics for influencing enrollments, and it rates the tactics' efficiency. Implications for policy and research round out the article with the conclusion that using new tactics--such as specialized academic help, financial aid, and information dissemination--will be a wiser choice than relying more heavily on old ones. (Author/ID)

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SCHOOL OF EDUCATION STANFORD UNIVERSITY

EA 012 783

Project Report No. 80-A5

EFFICIENCY AND ENROLLMENT MODIFICATION IN HIGHER EDUCATION

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April 1980

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This work was supported by the National Institute of Education, under its grant OB-NIE-G-78-0212 to the Institute for Research of Educational Finance and Governance at Stanford University, and by the Exxon Educational Foundation. The analyses and conclusions do not necessarily reflect the views of policies of this organization.

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Abstract

Some students enter college, while others do not. Increasing the proportion of prospective students who do enter has been a longstanding objective for colleges. In recent years both general increases in enrollment rates and more localized ones--among poor students, for example--have become public objectives. To meet these public agencies might employ various tactics. Different tactics involve different sorts of intervention into different phases of students' decision processes; they also entail commitments of different terms and different unit costs. This article summarizes findings and judgments as to the effects and costs of various typical tactics for influencing student enrollment decisions, and uses these to answer crudely a question policy makers must consider: In order to influence enrollment patterns most efficiently, what tactics ought public agencies to employ?

Efficiency and Enrollment Modification in Higher Education

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Students tend to enter college when college appeals to them, when appropriate college choices are available, and when at least one of the available colleges has a larger value than the other available options. When any of these conditions is not met--or appears not to be met--students tend to choose otherwise. There are occasions on which enrollment choices differ from what is optimal for society, and in such cases the logical objective is to change some students' minds.

For enrollment patterns in higher education to change, students must move from the "choose other" to the "choose college" group; merely reinforcing students' convictions that they have chosen wisely is of no benefit. Three possible strategies ensue: (1) changing the parameters of the situation, which comprise students' preferences, the list of options among which they may choose, and the characteristics of the specific options; (2) improving available information about specific colleges and jobs, so that the perceptions which inform students' choices are accurate (or at least favor college choices); or (3) reducing the role of chance in student choices. Among these strategies only two--changing parameters and information--have had wide use, since only for these do theory and research suggest specific tactics. These tactics have ranged from expensive ones, such as building new colleges, to relatively inexpensive ones, such as publishing summary college guides.

*This work was supported by the National Institute of Education, under its grant OB-NIE-G-78-0212 to the Institute for Research of Educational Finance and Governance at Stanford University, and by the Exxon Educational Foundation.

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There are, of course, other tactics which influence enrollment in higher education. First, there are tactics which make alternatives--jobs, in particular--more or less attractive. Second, and more generally, there are tactics which influence enrollment patterns not by affecting student matriculation, but by affecting persistence among matriculated students. Tactics which influence enrollment by modifying the attractiveness of jobs probably are less efficient than those which seek to modify enrollment directly, although I can cite little data to support this assertion. Moreover, the specific tactics which would increase enrollment--rendering the job market unattractive, perhaps, by increasing unemployment--are unpalatable on other grounds, and thus unlikely to be adopted as public policy in their own right, whatever the potential for increasing enrollment. This is not the case for tactics directly intended to keep students in college once they enter, but even so there has been little public attention to persistence among college students. (One clear indication of this is the paucity of aggregate statistics on degree completion. The Digest of Educational Statistics has several tables on first-time enrollment, none on persistence.) To the extent potential persistence-directed tactics parallel those I discuss below, this analysis will provide crude estimates of their efficiency; other such tactics will require further analysis elsewhere.

Few tactics have been evaluated as enrollment modifiers, largely because other concerns have driven public strategies. The resulting dearth of efficiency estimates for various potential enrollment-directed

tactics has attracted little notice, since other features of higher education--academic emphasis, politics, relevance--have dominated public concern. In recent years, however, enrollment in higher education has itself become a dominant concern.

Unless colleges increase or replace the yield from the traditional college-student pool, total enrollment in colleges will shrink as the large cohort born in the early nineteen-fifties leaves this pool to smaller cohorts. Moreover, the stubbornly small proportion of minority and poor students which enrolls in college requires public action. Thus enrollment effects have become an important criterion in the design of current and future public programs in higher education and, since resources are tight, agencies must select tactics to maximize program efficiency: the ability to deliver maximum effect for minimum expenditure.

Although directly evaluative studies are rare, I think it possible to use indirect evidence and some subjective judgments to rank typical enrollment-directed tactics according to their efficiency, and thereby to understand what sort of considerations will be important in the design of future enrollment-driven public programs in higher education. This task requires four assessments. First, empirical studies based on a general model of student choice yield assessments of different variables' effects as small, moderate, or large. The efficacy of different tactics varies according to the variables they seek to influence within this model. Second, by considering unit costs and the minimum commitment required to produce effects, it is possible to estimate the costs of different tactics on a similarly crude scale. Third,

tactics focus on their target groups to different and roughly estimable degrees--low-focus tactics waste money or effort on students whose minds will not change. Fourth, tactics build on current practice to different degrees, which yields estimates of how much more effort can be expended before tactics yield diminishing returns.

Choice Models

Before undertaking these assessments and rating tactics' efficiency, it is necessary to present the underlying general models of student choice and to outline the relevant empirical results. I concentrate here on traditional college students. Although similar models probably apply to nontraditional students (Bishop and VanDyk, 1977), relevant empirical work--evaluative or descriptive--is too scarce to permit even crude analysis. Following this presentation and review I describe my assessment of nine typical tactics for influencing enrollments, and finally weave these into some more general observations on the analysis and selection of policies in this area..

Two complementary models--sociological and economic--dominate research on student choice. The sociological model specifies a variety of social and individual factors leading to occupational and educational aspiration.[1] Educational attainment (which includes college entry) results from the interaction between these aspirations and real-world constraints. Since the effect of constraints is of less interest to sociologists than the aspiration-building process, studies based on this model usually focus on aspirations themselves.

The corresponding economic model specifies the choice among post-

secondary alternatives as a process whereby the student first excludes and then evaluates alternatives, the exclusion criteria being largely a product of geographic, economic, and academic factors and the evaluation criteria a function of the student's family background, social context, and academic experience. Economists are interested in the relationships between the attributes of "goods" (college and job characteristics, for example) and individual choices, and these interests lead to models precisely opposite in emphasis to those of sociologists: economic models emphasize the interaction between preferences, which are largely a function of aspiration, and constraints.[2]

A combined model like that in figure 1 divides student choice processes into three phases. First, students' aspirations develop as sociologists suggest they do; these and an assessment of resources combine to yield criteria for evaluating alternatives. Next, students consider their options, excluding some as unfeasible and obtaining information about others. Often entire classes of options are excluded; some students never consider college, while others never consider anything else. Finally, students evaluate the remaining options and select according to their judgments. (Two details of this last phase--whether it in fact comprises separate subevaluations for different types of options, and the degree to which it is stochastic rather than deterministic --are widely discussed in the literature, but are of little importance here.)

Phase I: Preference. To the extent the first part of this model reflects sociological processes, its basic structure is quite well understood (Sewell et al., 1957, 1970; Jackson, 1977, 1978). The strongest

correlate of high school students' aspirations (educational or occupational) is their academic achievement. Although the zero-order correlation (about 0.7; Jackson, 1977, table 3.10) is somewhat inflated by joint dependency of aspiration and achievement on prior variables and by some reciprocal effects between them, it is so much larger than others that the general assertion is safe. The next strongest correlate of aspiration is context (perhaps 0.4), but here general assertions are difficult for two reasons: first, there is considerable disagreement as to what contextual features--peers, neighborhood, school--are most important;[3] second, joint dependency probably explains a good deal of any correlation. Whatever the resolution of these disagreements, context variables are very important. Family background is the third strongest correlate of aspiration. It is the mechanism of both joint dependencies above, which accounts for the conventional wisdom that it is the strongest independent influence on student aspiration. In terms of unique, direct effects, however, it clearly follows achievement and context in importance.

When measured late in high school, aspiration probably reflects both students' preferences for certain options and their perceptions of their feasibility. Since late measurement is the norm, part of the correlation between family background and aspiration is probably due to perceived constraints. If one could measure preferences without this contaminating influence, one would presumably find that poor backgrounds did not deflate preferences as strongly. This reinforces the ranking of these variables' effects: academic achievement strongest, context

next, and family background third.

This reasoning applies formally only to unidimensional "preferences," rather than the multidimensional set of exclusionary and evaluative criteria the general model entails. Extension of the limited empirical results to the general case is supported by the conventional wisdom among admissions and recruiting personnel; it is refuted somewhat by the meticulous work of Coleman (1973) on the transmission of status, which suggests that family background has intricate, specific, and pervasive effects likely to be obscured in simple quantitative analysis.

Phase II: Exclusion. Most college places are appropriate for most college students insofar as basic cost, offerings, requirements, and benefits are concerned. Geography introduces differences: students incur expenses to attend some colleges, especially travel or residence costs for distant colleges or supplemental tuition costs for out-of-state ones (Jackson, 1977, 1980; Bishop, 1975; Trent and Medsker, 1968; Anderson et al., 1972; Tuckman, 1973; Kohn et al., 1976; Carroll et al., 1977; Hoenack, 1971). Even so most students--those in urban areas, in particular--may equally well attend any of several colleges.

One might expect students to consider all available colleges, reject *a priori* those which are unfeasible (too expensive, too demanding, or ill-matched to interests), and gather information to evaluate and compare the substantial remainder (Radner and Miller, 1975; Kohn et al., 1976). Yet the limited evidence available suggests that accurate information about colleges is difficult to come by (Willett, 1976; El-Khawas, 1977), and that students typically exclude from their choice sets colleges they ought to evaluate (Jackson, 1977). There is no reason to

believe the consideration of jobs is any better informed or broadly formulated. Information thus follows geography as a factor in the exclusion phase of student choice: students exclude colleges as unfeasible based on partial information when more information would lead them to do otherwise, and quite reasonably they do not consider colleges unknown to them or about which they can obtain no information. Finally, students' choice sets depend on their exclusion criteria, which in turn depend on their anticipated financial resources and their academic experience.

Although evidence is limited, this general view of the process by which students identify choice sets is rather uncontroversial (as are analogous procedures for considering noncollege, primarily job, options): location exerts the strongest influence, followed by the availability of accurate information and finally by family, academic, and vocational background and the criteria they entail. The physical nature of the two strongest influences make this phase a likely target for public-agency intervention, as will be apparent below.

Phase III: Evaluation. Although it has received the most empirical attention in recent years, this phase in the student-choice process is almost anti-climactic: all but a small fraction of the decisions to ignore or exclude specific options are made before students reach this stage (Jackson, 1977, chapter 5). Faced with a choice set comprising college options, noncollege options, or both, each student (perhaps implicitly) translates his or her preferences into a rating scheme, rates each option in the choice set, and selects according to these ratings.

There is considerable disagreement in the literature over the form and consistency of students' rating schemes for colleges and over the precise relation between ratings and choice, but there is enough agreement for my purposes (Kohn et al., 1976; Carroll et al., 1977; Radner and Miller, 1975). First, both students' rating schemes and their choices are to a certain extent stochastic, so complete understanding of control of individual choices is impossible. Second, students' rating schemes probably are bivariate: they involve only benefits, which are estimated differently for colleges, jobs, and other types of choices; and costs, which are measured on relatively consistent time or money scales. Third, students are unable to differentiate among colleges according to benefits, in part because their choice sets are homogeneous (Jackson, 1977) and in part because students (and even well-informed researchers) have trouble believing that college-to-college variation in benefits exists or, to the extent that it does exist, is predictable from college attributes (Jencks et al., 1979; some contrary evidence is in Wise, 1975). Fourth, and consequently, the only important variable in students' evaluation of college options is the net cost of attending each college; other important college characteristics--location and academic level, in particular--influence only choice-set exclusion in any substantial way (Jackson, 1977; Kohn et al., 1976; Carroll et al., 1977).

For noncollege options similar arguments apply, albeit with less empirical foundation. Here, however, there likely is considerable variation among each student's ratings of different jobs' benefits and little

among his or her ratings of their costs. Kohn et al. (1976) posit a preliminary choice among like options, yielding the cheapest college, the most lucrative job, and so on. In the end the student chooses among these according to some sort of benefit-cost (perhaps rate-of-return) analysis.

The important variables in the evaluation phase of student choice thus include college and job attributes, cost among them. In addition, family background and academic experience play a role in students' rating schemes, largely by serving as criteria for evaluating college costs and academic requirements. Precise ordering is difficult, but my reading of the relevant studies is that in the evaluation phase college costs, job benefits, and (where there is variation within the choice set) location have the strongest effects, followed closely by the interactive family background and academic experience. College attributes other than cost have relatively weak effects, as distinct from some of the same variables' stronger effects in the exclusion phase.

What, then, is the relative importance of the various factors in the general model of student choice? Figure 2 suggests an answer, based on combinations of the within-phase orderings I have outlined thus far. According to this combined analysis four factors (family background, academic experience, location, and college costs) have strong effects on student choice, while three (information, college attributes, and job attributes) have moderate effects and one (social context) has only a weak effect. This is the ranking I need to begin assessing typical tactics for influencing enrollment, to which task I now turn.

Tactics

Ignoring constraints of cost and diminishing return, the best tactic for influencing enrollment should be directed at the variable with the strongest effect: academic experience. Such a tactic would presumably try to give students better academic preparation, through some combination of individual and institutional assistance. Two efforts in recent times reflect such thinking: the effort to prepare more students for science careers after the Russian Sputnik launch, which was directed at schools; and the effort under the Great Society aegis to increase minority representation and perseverence in colleges, which comprised both federal programs (Upward Bound, in particular) and college "bootstrap" programs.

Ordinarily costs cannot be ignored, and for many possible tactics diminishing returns are likely, often because there is little room for additional effort. For example, although family background is a powerful influence on student choice, modifying family background to any useful degree would require social change of the most fundamental sort--an extraordinarily expensive (and politically controversial) enterprise. Similarly, the availability of a nearby college is an important impetus for a student to enter college, but there are relatively few students who are not already near a college. Therefore, the ability of a college-building tactic to increase enrollment is limited.

I have selected nine varied tactics to evaluate. Although the selection is arbitrary, the nine tactics represent quite well the universe of historically and theoretically important college-oriented tactics, excluding only family-directed approaches for which I find little argu-

ment. The qualifier "college-oriented" underscores the limits on this study I discussed in the introductory section. Two larger classes of tactics--those which are not directed at college enrollment but nevertheless influence it, such as employment-directed tactics, and those which affect persistence rather than matriculation decisions--could also be analyzed within the present framework. Indirect tactics, such as employment programs, are not likely to be efficient or palatable methods to increase enrollment; the basic data necessary to analyze persistence tactics are not available. Thus I have neglected both in favor of tactics which are likely to come under consideration.

Figure 4 presents various estimates for each of the nine tactics. The nine tactics require description, since their brief titles are less substantive than mnemonic. "School Quality" encompasses tactics which improve high schools so as to induce more of their graduates to enter college. "Academic Help" comprises tactics which help individual students to do better in school and to prepare themselves for college, like the Upward Bound program. "College Offerings" tactics change colleges to make them more attractive to students, perhaps by creating new courses or scheduling old ones at new times, while "College Location" tactics build new colleges or new branches of old ones. "Public Subsidy" tactics

subsidize college operations with a view toward reducing tuition charges; with few exceptions these influence only public colleges. "General Aid" tactics make financial aid available in portable form to all or a substantial subset of prospective college students; "Targeted Aid" tactics are restricted to particular sorts of students or studies. Finally, "General Information" tactics involve publishing and disseminating information, either by and about a particular college or in collected form, while "Specific Information" tactics involve providing direct, individual, ad hoc information to students, perhaps (but not necessarily) in response to inquiries.

The nine tactics affect different variables in the student choice process, and their effectiveness varies accordingly. The tactics' costs also vary, for three reasons: they have different basic costs per target student, they must be implemented for varying periods to have their effect on these students, and they require commitments of different term to agencies or individuals. The cost of using a tactic is roughly its basic cost times the term of service required for effect or by commitment, whichever is longer. Figure 3, which summarizes this information for the nine tactics, suggests that School Quality, College Offerings, and College Location tactics are the most expensive. Academic Help, Public Subsidy, General Aid, and Targeted Aid tactics are of moderate cost, while the two Information tactics are least costly.

The two remaining pieces of information I need to assess to efficiency of the nine tactics are their focus and their latitude. "Focus" refers here to each tactic's ability to concentrate efforts on students

whose decisions are likely to be unsatisfactory absent intervention, without wasting time or money on students who would enter college in any case. "Latitude" refers to the number of students whose situation a tactic might change: building new colleges has low latitude, since most students are already in the target situation, while general financial assistance has high latitude, since most college students currently must rely, in part, on their own (or their parents') money. Specific data are scarce here, so judgments are necessarily subjective. They appear with other information about the tactics in figure 4, and complete the analysis but for the last step: estimating efficiency.

Efficiency, Tradeoffs, and Agency Decisions

Efficiency, here, is the ratio of students persuaded to change their minds and enter college, a measure of impact, to funds expended for this purpose, a measure of cost. An optimal tactic for small-scale intervention exerts strong effects, incurs low costs, and focuses on students who would not otherwise enter college. An optimal large-scale tactic must, in addition, have latitude to act. None of the nine tactics I have assessed is optimal in even the small-scale sense: strong effects never come at low cost, only two tactics are highly focused, and one of these incurs moderate cost while the other exerts only moderate effects. The tactics do, however, group themselves into three crudely ranked categories, and these appear in the "efficiency" column of figure 4.

The tactics able to persuade the largest number of students to enter college at the lowest cost are both highly focused and individually oriented: Specific Information, which combines moderate effects with

low cost, and Academic Help, which combines strong effects with moderate cost. Closely following these is strong-effect, moderate-cost Targeted Aid, also focused but less so than the two highest-ranking tactics. The three institutionally-mediated tactics have the lowest efficiency: they combine moderate to strong effects with high cost and low focus.

For large-scale public applications there is one important difference between the two highest-efficiency tactics: since a great deal of Specific Information already flows from colleges to students (though certainly not all that could flow; Willett, 1976, and El-Khawas, 1977, discuss this), an all-out program relying on this tactic has less overall potential than one relying on individual Academic Help, which is rarer. This reflects the different latitude the two tactics have; corresponding assessments of the other tactics appear in the last columns of figure 4.

It is tempting at this point to simply assert that public programs should, if they seek to modify enrollment, select the most efficient tactic from my list and use it. This is too simplistic. I must instead address two more general questions: What, in general terms, differentiates efficient from inefficient tactics? What are the likely tradeoffs between efficiency in modifying student enrollment and efficiency in attaining other objectives?

Ordering the tactics from figure 4 according to their efficiency suggests an answer to the first question: Efficiency increases as tactics concentrate on individual needs, and decreases as mediating organizations--colleges and schools--are required to carry out the original agencies' mandates. These observations reflect the inherent focus of

individualized tactics and the long, expensive commitments required of institutional ones. Insofar as agencies seek to modify enrollment patterns, therefore, they ought to select tactics which are individualized and reach students directly.

Tradeoffs are more difficult to discuss, since they depend in large part on the strategies agencies use to specify and determine their own choice sets. If, like students, agencies tend to exclude alternatives they ought to evaluate in more detail, then tradeoffs are not important; efficiency in modifying enrollment either is or is not the guiding criterion. If, instead, they wish to follow normative procedures for rational choice (Harrison, 1975), agencies must weight various objectives, scale tactics according to their ability to attain each objective, and then combine the scalings according to the weights to produce a single index of utility. In fact, agencies tend either to consider objectives sequentially, which leads to behavior called "elimination by aspects" (Tversky, 1972) or "muddling through" (Lindbloom, 1959), or to view them as constraints rather than objectives, which leads to behavior Simon (1947) calls "satisficing." The difference between these models of decision making is important, since minor differences in the ordering of closely-ranked objectives are unimportant in the ideal, normative case but quite important in the actual, sequential case.

Consider, for example, the two very real objectives of increasing enrollment and providing public resources to citizens on an equal basis. If these are equally important to the decision maker, then under the ideal model the index of utility for given expenditure on a tactic will

depend in equal measure on its efficiency in increasing enrollment and on its efficiency in improving equity. If the decision maker's preferences tilt slightly in either direction, the index of utility will still be about the same, and the choice of tactics should not change. If, on the other hand, the decision maker considers objectives sequentially, then reversing the ranking of these two objectives means that, say, he or she will choose the equitable tactic which best increases enrollment rather than the enrollment-modifying tactic which is most equitable, and will ignore more balanced tactics altogether. To be more concrete, say the decision maker must choose among five tactics, which can be rated according to their efficiency in increasing enrollment and their efficiency in improving equity according to figure 5. The normative decision maker with an ordinary indifference curve (that is, a smoothly balanced list of combinations which have equal utility) will probably select tactic E, and this decision will not change if his or her relative preferences for equity and enrollment change a little. The sequential-objective decision maker will choose differently depending on his or her ranking of the two objectives: if enrollment is most desirable, then tactics A and C are the only ones considered and C is chosen; if the ranking is reversed, then tactics B and D are considered and D is chosen. Not only are the resulting tactics different in the two cases, but the normatively best choice--tactic E--is never considered.

Implications

Policy. Explicit statements of public goals in higher education are rare, and consequently these must be inferred from legislative and budgetary histories. Longanecker (1978) finds that ". . .federal policy has been focused primarily on achieving three goals: promoting equality of educational opportunity, reducing the burden of college costs, and assuring a strong system of higher education" (p. 1). I argued above than objectives increasingly reflect concern about general enrollment levels, in addition to concern for enrollment among poor and minority students. To fulfill these objectives federal and state governments spent in fiscal 1979 about twenty-nine billion dollars on higher education. The federal government spent about eight out of its ten billion dollars directly on students, through relatively general aid programs (Chronicle, 1979b). In the same year state governments spent under one billion of their nineteen billion dollars directly on students, the balance going primarily to institutions in the form of public subsidy (Chronicle, 1979a).

According to the analysis, institution-support tactics like Public Subsidy, which states emphasize, are inefficient means to influence enrollment. The apparent corollary--that enrollment-directed tactics are inefficient means to help institutions--does not necessarily follow, since to the extent institutions depend on enrollment (and tuition) for funding, increased enrollment entails increased support. (Actually, to be precise, increased enrollment can easily entail greater costs than revenues, and increased deficit. It is true, however, that less enrollment loss means less loss of support, since costs respond more readily to increases

than decreases.) The benefit institutions derive from mediating indirect tactics is offset considerably by the social cost of those tactics' inefficiency in filling seats. The aggregate benefit to both institutions and society would probably be larger if states used efficient, and therefore direct, enrollment-modification strategies.

The federal reliance on General Aid tactics is an efficient, optimal choice if the objectives of increasing enrollment, equalizing access, and supporting institutions are to be balanced. The analysis suggests that to maximize enrollment impact per dollar spent tactics should be individualized, which means the disparity between student intentions and social desiderata determines the distribution of effort or money. This conflicts with attempts to treat all citizens equitably. Treating citizens equitably calls, for example, for aid programs which support students according to their need, not the choice they would make in the absence of aid. Satisfying equity criteria general entails reducing program focus, which unavoidably reduces efficiency in modifying enrollment. General Aid is a reasonable compromise from both perspectives, and since the money flows ultimately to institutions it advances the third objective--supporting institutions--as well.

If increased resources are devoted to modifying enrollment patterns, then the general implication of this study is that using new tactics--specialized academic help, financial aid, or information--will be a wiser choice than relying more heavily on old ones.

Research. Ordinarily the major conclusion from a crude, exploratory analysis such as this is that replicating and improving it are of the highest importance. Better studies of tactical efficiency are indeed

important, but this is not the observation with which I wish to conclude. Often policy analysts avoid "soft," judgmental research such as this, going so far as not to consider objectives for which there are no "hard" data. In my view this exclusion is unwarranted and undesirable, and I think the relatively clear results of this study illustrate the utility of systematic but "soft" analysis. The major determinants of public policy are public purposes and the process by which these and policy analysis guide the choice of tactics. Improving this choice process--in particular so that it weights and balances rather than ranks objectives, and so that subjective assessments are sought and considered where necessary--is the best way to insure maximum social gain for minimum social expenditure.

March 1980

Figure 1

Combined Student Choice Model

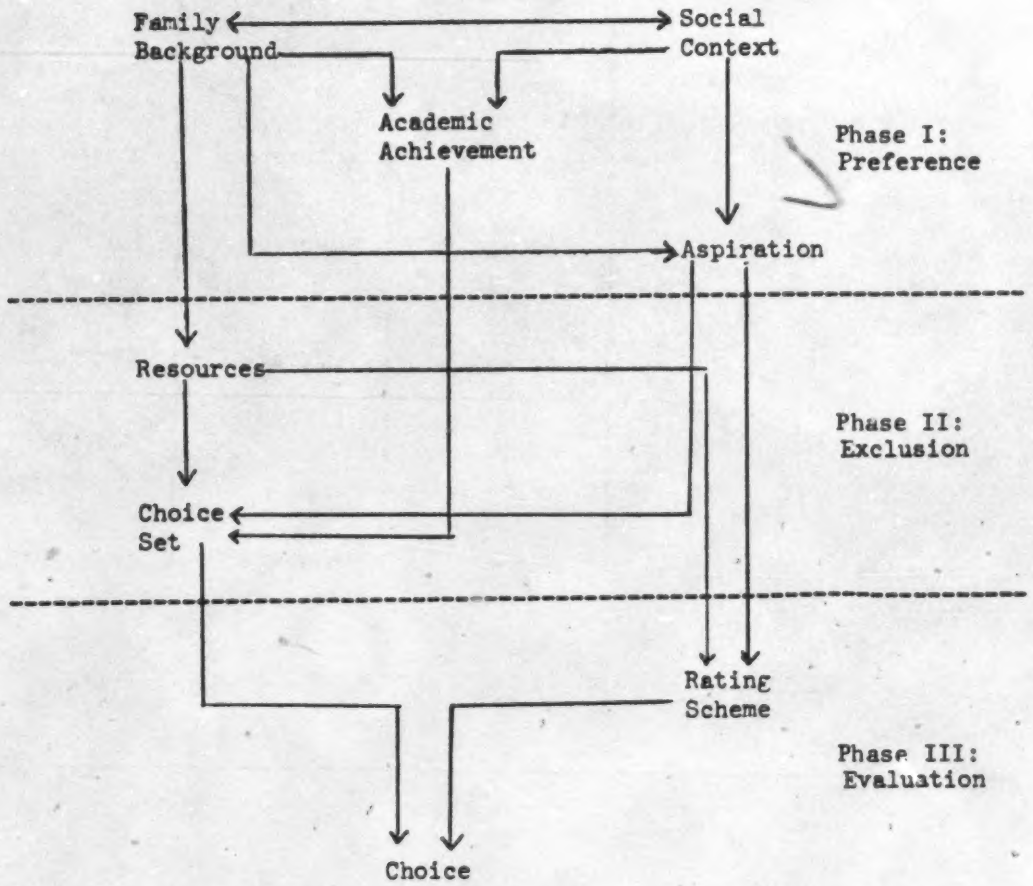

Figure 2

Variable Effects, by phase

	Preference	Exclusion	Evaluation	Overall
Family Background	Moderate	Moderate	Moderate	Strong
Social Context	Moderate			Weak
Academic Experience	Strong	Moderate	Moderate	Strong
Location		Strong	Moderate	Strong
Information		Strong		Moderate
College Costs		Strong	Moderate	Strong
College Characteristics		Moderate	Weak	Moderate
Job Characteristics		Moderate	Moderate	Moderate

Figure 3

Tactic Costs

Tactic	Basic Cost	Effect Period	Commitment Term	Cost
School Quality	moderate	long	long	high
College Offerings	moderate	long	long	high
College Location	high -moderate*	short	short-long*	high
Academic Help	moderate	moderate	short	moderate
Public Subsidy	moderate	moderate	moderate	moderate
General Aid	moderate	moderate	moderate	moderate
Targeted Aid	moderate	moderate	moderate	moderate
General Information	low	short	short	low
Specific Information	low	short	short	low

*depends on capital cost amortization plan; basic cost is modest and commitment term is long when the cost of the facility is apportioned over time, as by mortage financing.

Figure 4

Tactic Efficiency

Tactic	Target Factor in Choice Process (see fig. 2)	Intermediary	Effect (fig. 2)	Cost (fig. 3)	Focus	Latitude	Efficiency	Potential
School Quality	academic experience	school	strong	high	low	moderate	low	low
College Offerings	college characteristics	college	moderate	high	low	moderate	low	low
College Location	location	college	strong	high	low	low	low	low
Academic Help	academic experience	none	strong	moderate	high	high	high	high
Public Subsidy	college costs	college	strong	moderate	low	moderate	moderate	low
General Aid	college costs	none	strong	moderate	low	high	moderate	moderate
Targeted Aid	college costs	none	strong	moderate	moderate	high	moderate+	moderate+
General Information	information	none or publishers	moderate	low	low	low	moderate	low
Specific Information	information	none	moderate	low	high	moderate	high	moderate

Figure 5

Enrollment and Equity Efficiency

(fictional example)

Tactic	Enrollment-influencing	Equity-influencing
A	high	zero
B	zero	high
C	high	low
D	low	high
E	moderate	moderate

FOOTNOTES

1. Sewell et al. (1957, 1970) represent this genre well. Many sociological studies concentrate on only one or two explanatory variables, and consequently intervariable comparisons and multivariate models rely heavily on meta-analysis.

2. Economic studies tend to be multivariate, but rely on a bewildering assortment of samples and time series constrained in a variety of ways. Focused reviews of this literature appear in Jackson and Weathersby (1977); a more general (and somewhat mind-boggling) review is in Cohn and Morgan (1978).

3. Bayer (1969), for example, examines the effect of marriage plans; Bordua (1960) and Sewell and Shah (1968), parental encouragement; Haller and Buttersworth (1960), peer influences; Sewell and Armer (1966) and several commentators, neighborhood context; Meyer (1970), Boyle (1966) and Jencks and Brown (1975), high school; Brittain (1963) and McDill and Colement (1965), both parent and peer pressures; and so on.

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